

IN THE CLAIMS:

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B/C 1. (original) A method for programmably allocating system resources to accommodate
2 I/O transactions at I/O ports of a multiprocessor computer system comprising the steps
3 of:

4 determining the number and type of transactions anticipated at a port,
5 determining the number and type of devices being serviced via the port,
6 setting criteria for transactions at the port with respect to the number and type of
7 transactions and devices,
8 assigning the system resources to the port with respect to the criteria.

1 2. (original) The method as defined in claim 1 further comprising the steps of:
2 providing at least one control register for each port, wherein the control register
3 includes a plurality of programmable fields.

1 3. (original) The method as defined in claim 2 further comprising the steps of config-
2 uring the control register fields to contain a number of direct memory access engines
3 available at a port to support a transaction, a number of cache lines for requested data,
4 and a number representing priorities among the anticipated transactions.

1 4. (original) The method as defined in claim 1 further comprising the step of preparing
2 for hot swapping an assembly, wherein the preparing for hot swapping comprises, with
3 respect to the assembly being replaced, copying the assembly's state, the state of its asso-
4 ciated memory systems, its status and control registers, and the contents of its cache and
5 memory systems.

1 5. (original) The method as defined in claim 4 wherein the copying comprises the steps
2 of:

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3 flushing the data in the local cache and local memory to storage not affected by
4 the hot swapping,
5 invalidating data in cache,
6 setting a flush indicator in the port's cache status and control register,
7 flushing directory data to non-affected storage,
8 finding and stopping any new transactions,
9 completing any transactions already started or pending,
10 flushing the translation look-aside buffers,
11 invalidating the contents of the translation look-aside buffers, and
12 updating the system directory.

1 6. (original) A system for allocating system resources to accommodate I/O transactions
2 at I/O ports of a multiprocessor computer system comprising:

3 the number and type of transactions anticipated at a port,
4 number and type of devices being serviced via the port,
5 criteria for operations at the port with respect to the number and type of transac-
6 tions and devices,
7 means for assigning the system resources to the port with respect to the criteria.

1 7. (original) The system as defined in claim 6 further comprising:
2 at least one control register for each port, wherein the control register includes a
3 plurality of programmable fields.

1 8. (original) The system as defined in claim 7 wherein the control register fields in-
2 clude a number of direct memory access engines available at a port to support a transac-
3 tion, a number of cache lines for requested data, and a number representing priorities
4 among the anticipated transactions.

1 9. (currently amended) The ~~method-system~~ system as defined in claim 6 further compris-
2 ing:

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3 means for hot swapping of an assembly, including means for copying the assem-
4 bly's state, the state of its associated memory systems, its status and control registers, and
5 the contents of its cache and memory systems.

1 10. (original) The system as defined in claim 9 wherein the means for copying com-
2 prises::

3 means for flushing the data in the local cache and local memory to storage not af-
4 fected by the hot swapping,
5 means for flushing, modifying and invalidating unmodified data in cache,
6 means for setting a flush indicator in the port's cache status and control register,
7 means for flushing directory data to non-affected storage,
8 means for finding and stopping any new transactions,
9 means for completing any transactions already started or pending,
10 means for flushing the translation look-aside buffers,
11 means for invalidating the contents of the translation look-aside buffers, and
12 means for updating the directory.

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1 11. (new) The method as defined in claim 1 herein the criteria comprises system
2 needs with respect to operating speed, latency, priority, including low priority, debug-
3 ging, communications credits, hot swapping, main and cache storage space, and control
4 registers.

1 12. (new) The system as defined in claim 6 wherein the criteria comprises system
2 needs with respect to operating speed, latency, priority, including low priority, debug-
3 ging, communications credits, hot swapping, main and cache storage space, and control
4 registers.